What is claimed is:

1 1. A layout check system that checks layout data that

2 defines a layout of a power source, a component that includes

3 a power pin, and a bypass capacitor on a printed wiring

4 board, comprising:

5 a storage unit operable to store the layout data, the

6 layout data including information used for calculating a

7 first value and a second value, the first value corresponding

8 to impedance between the power pin and the power source,

9 and the second value corresponding to impedance between

10 the power pin and the bypass capacitor;

11 a calculation unit operable to calculate the first

12 value and the second value, with use of the stored layout

13 data;

14 a judgment unit operable to judge, by comparing the

15 first value with the second value, whether the layout allows

16 the bypass capacitor to function effectively; and

17 an output unit operable to output error information

18 when a result of the judgment is negative.

1 2. The layout check system of Claim 1, wherein

2 the calculation unit calculates, with use of the layout

3 data, a shortest wiring distance between the power pin and

4   the power source as the first value, and a shortest wiring

5   distance between the power pin and the bypass capacitor

6   as the second value, and

7   the judgment unit judges that the layout does not allow

8   the bypass capacitor to function effectively if the first

9   value is less than the second value.

1   3. The layout check system of Claim 2, wherein

2   when a power via exists on wiring that connects the

3   power pin and the bypass capacitor, the calculation unit

4   calculates, with use of the layout data, a shortest wiring

5   distance between the power pin and the power via as the

6   first value, and the shortest wiring distance between the

7   power pin and the bypass capacitor as the second value.

1   4. The layout check system of Claim 1, wherein

2   the storage unit stores a threshold value, and

3   the judgment unit judges whether the layout allows

4   the bypass capacitor to function effectively, by comparing

5   the threshold value with a value that represents a ratio

6   of the first value to the second value.

1   5. The layout check system of Claim 1, wherein

2   the layout data includes type information that

3   indicates whether wiring is a line or a plane, and, for

4   wiring that is a plane, further includes area information

5   indicating a surface area of the plane,

6   the storage unit stores a prescribed value,

7   the layout check system further includes:

8   an analysis unit operable to analyze, with use

9   of the type information, whether wiring that connects

10   the power pin and the bypass capacitor is a line or

11   a plane; and

12   a power plane judgment unit operable to judge,

13   when a result of the analysis indicates that the wiring

14   that connects the power pin and the bypass capacitor

15   is a plane, whether the surface area of the plane is

16   less than the prescribed value, by referring to the

17   area information, and when the surface area is less

18   than the prescribed value, judge that the plane is

19   a specific power plane, and

20   when the power plane judgment unit judges the wiring

21   to be the specific power plane, the analysis unit further

22   analyzes, with use of the layout data, whether the specific

23   power plane and the power source are connected without a

24   bypass capacitor therebetween, and when a result of the

25   analysis indicates that the specific power plane and the

26   power source are connected without a bypass capacitor

27   therebetween, judge that the layout is not a layout that

28   allows a bypass capacitor to function effectively.

1   6. A layout check method for checking layout data that

2   defines a layout of a power source, a component that includes

3   a power pin, and a bypass capacitor on a printed wiring

4   board, comprising:

5   an obtaining step of obtaining layout data, the layout

6   data including information used for calculating a first

7   value and a second value, the first value corresponding

8   to impedance between the power pin and the power source,

9   and the second value corresponding to impedance between

10   the power pin and the bypass capacitor;

11   a calculation step of calculating the first value and

12   the second value, with use of the layout data;

13   a judgment step of judging, by comparing the first

14   value with the second value, whether the layout allows the

15   bypass capacitor to function effectively; and

16   an output step of outputting error information when

17   a result of the judgment is negative.

1   7. A program that has a computer execute layout check

2   processing for checking layout data that defines a layout

3   of a power source, a component that includes a power pin,

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4   and a bypass capacitor on a printed wiring board, comprising:

5   an obtaining step of obtaining layout data, the layout

6   data including information used for calculating a first

7   value and a second value, the first value corresponding

8   to impedance between the power pin and the power source,

9   and the second value corresponding to impedance between

10   the power pin and the bypass capacitor;

11   a calculation step of calculating the first value and

12   the second value, with use of the layout data;

13   a judgment step of judging, by comparing the first

14   value with the second value, whether the layout allows the

15   bypass capacitor to function effectively; and

16   an output step of outputting error information when

17   a result of the judgment is negative.